

# **Gravina Access Project**

## ***Preliminary Quantities and Cost Estimate***

### ***Technical Memorandum***



**Agreement 36893013  
DOT&PF Project 67698  
Federal Project ACHP-0922(5)**

**Prepared for:**



**State of Alaska  
Department of Transportation  
and Public Facilities  
6860 Glacier Highway  
Juneau, Alaska 99801**

**Prepared by:  
HDR Alaska Inc.  
712 W. 12<sup>th</sup> Street  
Juneau, AK 99801**

**July 2003**

## Executive Summary

Current Gravina Access Project costs are presented for access to the airport terminal, and for highway access to developable lands north of the airport. The cost to access developable land varies by alternative, largely depending on where each alternative makes landfall on Gravina, and the resultant distance to developable land north of the airport.

The column in the table below titled *Future Airport Development* identifies the cost associated with providing the airport with sufficient parking to meet the projected year 2025 parking demand. Although initial parking requirements could most likely be accommodated at the airport without construction of a parking garage under the current airport configuration, additional parking will need to be added to the airport at some time in the future.

		Airport Access	Developable Land Access	Future Airport Development	Totals	
	Alternative	Estimated Project Cost (\$ million)	Estimated Project Cost (\$ million)	Estimated Project Cost (\$ million)	Estimated Total Project Cost (\$ million)	Estimated Total Life Cycle Cost (\$ million)
200' Bridges	C3(a)	175	13	11	199	158
	F1	210	9	11	230	191
	F3 <sup>1</sup>	187	9	11	207	168
	C4	171	13	11	195	158
120' Bridges	D1	107	15	11	133	106
	C3(b)	143	14	11	168	133
Ferries	G2	49	0	11	60	90
	G3	47	10	11	68	98
	G4	32	15	11	58	88

<sup>1</sup> Assumes channel modification would be required

<b>Section</b>	<b>Page</b>
Executive Summary .....	SUM-1
1.0 Introduction .....	1
2.0 Previous Cost Estimates .....	1
3.0 Initial Alternatives Cost Comparisons .....	1
4.0 Costs for the Reasonable Alternatives .....	2
5.0 Life Cycle Cost Comparison .....	4
5.1 Definition of Life Cycle Cost.....	5
5.2 Cash Flow .....	5
5.3 Present Worth.....	7
5.4 Salvage Value.....	8
6.0 Calculating Life Cycle Costs for Gravina Access Project.....	9
6.1 Summary of Alternatives and their Cash Flow Components (in constant Year 2003 dollars) .....	11

## **1.0 Introduction**

The Gravina Access Project was commissioned in 1999 by DOT&PF to study ways to improve access from Ketchikan on Revillagigedo Island to Gravina Island. Gravina Island is home to Ketchikan International Airport, as well as much of the developable land available within the Ketchikan area. This technical memorandum has developed estimated costs for comparison purposes for the reasonable alternatives. Cost estimates include not only the construction cost, but also program development and life cycle costs, including operation and maintenance costs.

## **2.0 Previous Cost Estimates**

Earlier in this project, in order to compare the initial alternatives, costs were developed in the late winter and early spring of 2000 for all alternatives. This was done to ensure that one alternative or mode was not unfairly compared with other alternatives or modes. The basis of cost comparison for the original list of alternatives was as follows:

- Major items were estimated through quantity calculations, such as earthwork, pavement, number of stream crossings, bridge deck area, foundation costs, ferry acquisition and terminal costs, and tunnel cost per linear meter.
- All other items were estimated based on a percentage of the major items.
- Unit prices applied were based on recent bid tabs or recent engineering estimates for similar projects, specifically, the Boston Harbor tunnel, the Benicia Martinez Bridge, the new airport ferry being built in Ketchikan, and the recently constructed 3<sup>rd</sup> Street project in Ketchikan.

In addition to construction costs, Program Development costs were calculated for each alternative based on its total estimated construction cost. Program Development costs were initially defined as:

- |                              |     |
|------------------------------|-----|
| • Miscellaneous Contingency  | 35% |
| • Environmental Mitigation   | 10% |
| • Engineering/Administration | 8%  |
| • Construction Management    | 15% |

Alignment specific right of way costs were also added to the total to determine the Program Development costs and the Total Estimated Project Cost for each option.

## **3.0 Initial Alternatives Cost Comparisons**

In the earlier portion of the Gravina Access Project 18 alternatives were investigated, establishing engineering criteria, crossing concepts, summary of potential environmental impacts and costs, all for purposes of comparison of the alternatives. Engineering criteria established for the cost comparison included:

- Roadway cross-section included two travel lanes of 3.6m (11.8 ft.) and two shoulders of 2.5 m (8.2 ft) in width. Also included was a bike path of 2.4m (7.9 ft.) in width.
- Design speed was 90 KPH (55.9 MPH).
- Maximum grade was 6%.
- Cost estimates included access from Tongass Avenue to the airport terminal only.

Early estimates for Construction and Program Development Costs for the original list of alternatives were established as presented below:

Alternative	Total Estimated Project Cost (\$ million)
A1	268.8
B1	384.9
C1	242.0
C2	205.3
C3	145.8
C4	152.5
D1	89.2
D2	248.7
E1	262.6
E2	350.2
F1	205.8
F1 (cable stayed)	210.9
F2	553.2
F3	181.6
G1	71.5
G2	66.2
G3	47.1
G4	42.7

Note: These costs were developed in January 2000.

#### **4.0 Costs for the Reasonable Alternatives**

Initial screening of the original 18 alternatives resulted in the identification of nine alternatives as reasonable for further study, in this phase of the project. These nine reasonable alternatives were then refined to more accurately establish environmental impacts, and to review project costs for comparison purposes. During that process, the following changes were made:

- The roadway width was reduced to remove the separate bike path, which narrowed the overall highway section by 2.6 meters. This resulted in a reduced lane mile cost for the roadway estimate.
- The roadway profile was adjusted to reflect a revised design speed for the alignment of 70 KPH (43.5 MPH). Maximum grade changed from 6% to 8% on the roadway and on approaches to the bridge alternatives.
- The unit costs for the bridge were adjusted to reflect the actual bids received on the Benicia Martinez Bridge, a concrete box girder structure recently under construction. In addition, costs for major civil construction on the west coast were reviewed and adjustments to the bridge components made to recognize current market conditions. These adjustments resulted in increased bridge costs.
- Contingencies were adjusted to reflect the estimated risk by each major item. For example, the bridge foundation cannot be accurately estimated until site-specific geotechnical information is available. For that reason, that specific item has been assigned a 25% contingency.
- Miscellaneous Roadway Items: An analysis was conducted of DOT&PF bid tab summaries for 1995 to 1999, to establish relationships between the overall cost of roadway items and the cost of various miscellaneous items. Based on this analysis, three categories for miscellaneous roadway items were added to the cost estimate:
  - Removal Items - at 6% of roadway costs
  - Other Excavation & Emb. - at 3% of roadway costs
  - Miscellaneous Items - at 25% of roadway costs
- Because of the item-specific contingency, and the miscellaneous roadway items described above, the overall project contingency has been reduced to 15%. This is lower than normal at this stage, but appropriate because of the use of item specific contingencies.
- The ferry acquisition cost has been reviewed and adjusted based on additional information available from the new airport ferry construction.
- The cost of an access road to developable lands north of the airport on Gravina Island was estimated for all alternatives. These developable land access costs are identified in the cost table within the Executive Summary. Also included is the cost of a parking garage for ultimate airport development. Because these portions of the project are not strictly necessary for access to the airport, they are shown as separate costs within the Executive Summary cost table.

This detailed cost review resulted in significant cost revisions to most of the alternatives included in the reasonable alternatives evaluation. The resultant costs establish a basis for analysis of economic impacts on the community. It is appropriate to utilize these costs for comparative evaluations of each reasonable alternative, and to help determine the recommended alternative. Significantly, these costs are not accurate enough to utilize for budgeting purposes. In order to develop costs suitable for budgeting, additional information, including geotechnical, bathymetric and topographical data must be gathered and evaluated to establish a higher degree of design and quantity certainty.

The following table is a summary of the comparative costs for the Gravina Access Project's nine reasonable alternatives. A detailed breakdown of construction quantities (based on preliminary engineering studies) and itemized cost estimates (broken into the airport access and development access categories) can be found in the attachment. All of these costs have been totaled for each reasonable alternative, for this summary table. The attachment includes a detailed breakdown of the operation and maintenance costs for each reasonable alternative. It also indicates the assumptions made about the types of periodic major maintenance or rehabilitation needed during the life of the project, and costs associated with that work for each of the nine alternatives.

<b>Alternative</b>	<b>Total Estimated Project Cost (\$ million)</b>
C3(a)-200	199
C3(b)-120	168
C4-200	195
D1-120	133
F1-200	230
F3-200	207
G2	60
G3	68
G4	58

Note: Detailed breakdown is included in Attachment.

In response to concerns expressed by cruise ship pilots with respect to the impacts of Alternative F3 on marine navigation, DOT&PF proposes widening a portion of the West Channel to improve its navigational characteristics and mitigate adverse impacts to cruise ships transiting the West Channel. With such channel modification, the total estimated project cost of Alternative F3 would be \$207 million.

The nine alternatives can be grouped into three basic groups; high bridge, (C3(a), C4, F1, F3) low bridge, (D1, C3(b)) and ferries (G2, G3, G4). The magnitude of difference between total estimated costs is useful and appropriate to consider when comparing these alternatives. It should be noted again that additional fieldwork and preliminary design must be completed, in order to develop an opinion of cost that is of adequate accuracy for budgeting purposes.

## **5.0 Life Cycle Cost Comparison**

Life cycle costs were estimated to allow additional economic comparisons between the nine alternatives. Life cycle cost analyses are often used to evaluate the total cost of a project over its useful life, taking into consideration program development costs as well as annual operation and maintenance costs, major rehabilitation required during the life

of the project, and the value of money. Development of life cycle costs for this project adhered to guidelines provided in Federal Highway Administration – Office of Management and Budget (OMB) Circular No. A-94, October 29, 1992 and subsequent appendices. The methodology used is outlined in the following paragraphs. A summary of the assumptions used in the analysis included:

- All pavements would have to be overlaid at 20 year intervals
- Mechanical/electrical equipment of ferries would have to be replaced every 25 years
- Ferry terminal maintenance would be required every 10 years
- The useful life of a bridge is 75 years
- The useful life of the parking structure is 75 years
- The useful life of a ferry is 50 years
- Long term inflation rate is 2%
- Long term interest rate is 6.3%

Annual costs of operation and maintenance were based on evaluation of comparable systems, such as the existing ferry system and maintenance of large concrete bridges. Based on the above assumptions, the following comparisons include life cycle costs of the alternatives.

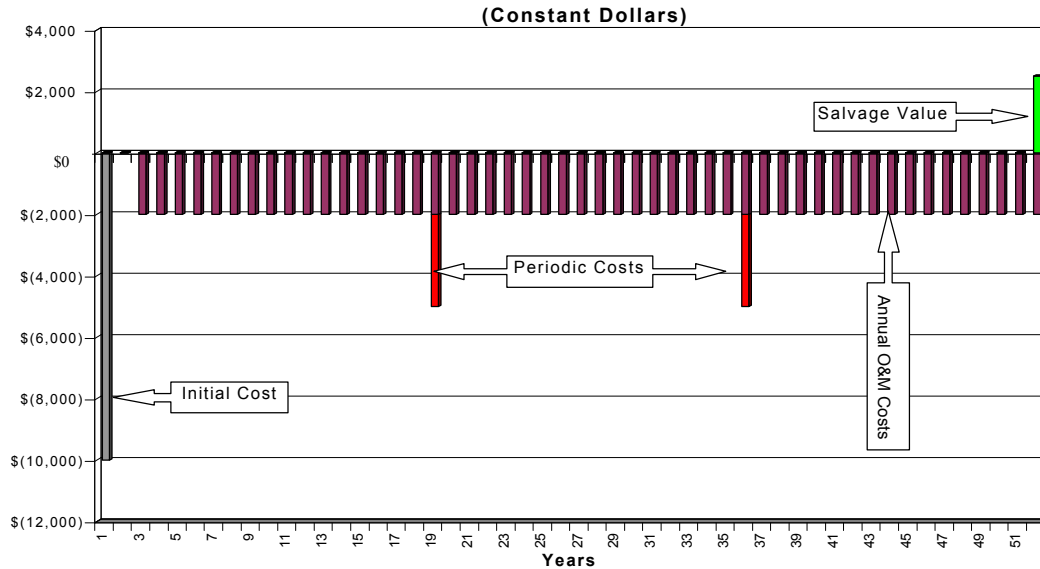
## 5.1 Definition of Life Cycle Cost

Life Cycle Cost is defined as the overall estimated cost of a single project alternative over the life of the project or a defined period. All of the income and expenses associated with the project that occur during its life are used to calculate the life cycle cost. Comparing their life cycle costs is a common way to evaluate different alternatives. Life Cycle Costs will be compared here using Net Present Value (NPV). For the Gravina Access Project, present worth is used to compare the life cycle costs of different alternatives.

## 5.2 Cash Flow

A cash flow diagram is often used to show how money is spent and earned. A simple cash flow diagram is shown in Figure 1. In this figure, each vertical bar represents the net expense or income for a single year. A vertical bar below the \$0-line indicates that money is spent on the project and a bar above the \$0-line indicates that money is earned or gained. The cash flow includes initial costs, annual operating and maintenance (O&M) costs, periodic maintenance costs, and salvage values. “*Constant dollars*” are used in this diagram, which means that the income and expenses do not include the effects of inflation. Also, annual operating and maintenance costs actually occur throughout the year, but in this cash flow diagram they are shown as a lump sum at the end of the year. A cash flow diagram similar to this was used for Gravina Access Project alternatives. Using a car as an example, the following shows the components of a cash flow diagram.



**Figure 1 - Cash Flow Diagram for Life Cycle Costs**

**Car Example 1:** The cash flow diagram for an automobile paid in full on the day of purchase includes the following costs:

- The *initial cost* is the price that is paid for the vehicle and any taxes and fees paid at the time of purchase.
- *Annual operating and maintenance costs* include the annual cost of fuel, oil, fluids, insurance and other costs that occur every year.
- *Periodic maintenance costs* include new tires, new brakes, new batteries and other maintenance costs that occur throughout the life of the vehicle to keep the vehicle in service.
- The *salvage value* is the price that the vehicle is sold for at the end of its useful life.

### Time Value of Money

When dealing with money or finances for a project over a long period, the time value of money must be considered. The value of money changes over time due to inflation and interest rates.

**Inflation** decreases the value of money over time by increasing the cost of goods and services. When we say, “A dollar today isn’t worth what it used to be,” we are usually referring to the loss in a dollar’s value due to inflation. If we have \$100 dollars to buy an item today, the same item 50 years ago would have cost \$37, assuming a 2% inflation rate. Similarly, an item that costs \$100 in the Year 2000 will cost about \$270 in the Year 2050 at a 2% inflation rate.

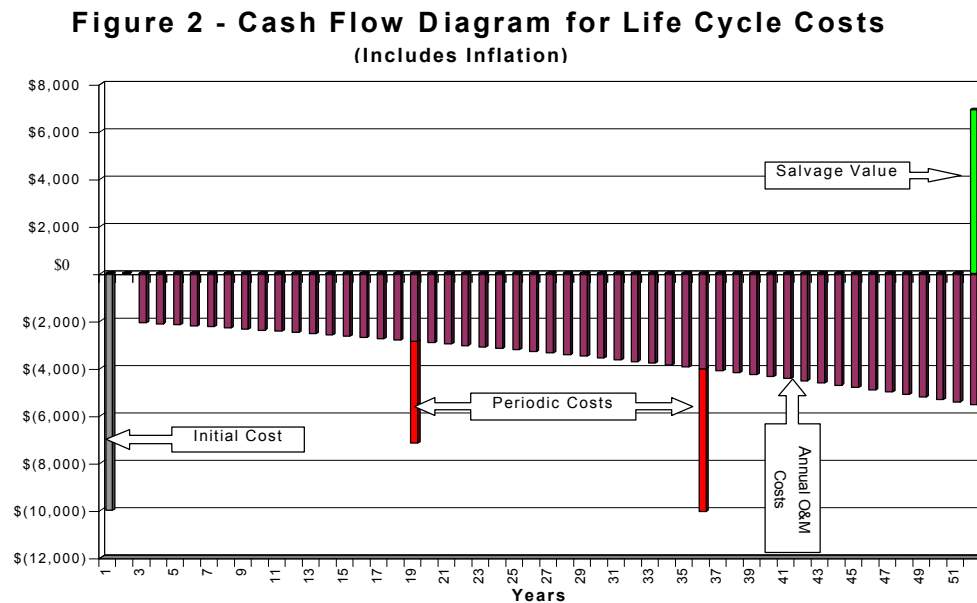
**Interest** accrued over time increases the value of money. Another way to think about this is that you can “make money” with the money you have in hand today. For example, suppose you put \$10 into a bank account that pays 6.3% annual interest. If you leave the

account alone and let that original \$10 and the interest accumulate, it will be worth \$212 in 50 years.

Because the value of money changes over time, it is very important to specify the year that the dollars are stated in. In the previous example, the \$100 price for the item is stated in Year 2000 dollars. When inflation is used to calculate the future cost, the \$270 price is in Year 2050 dollars.

### 5.3 Present Worth

Inflation and interest rates are combined to determine the *present worth* of an item. First, we assume that the price of the item purchased today is known. Second, an inflation rate is used to determine the future cost. The interest rate is used to determine how much money would have to be set aside today to pay for the item in the future. Together these factors determine the present worth of the item. Figure 2 shows the simplified cash flow diagram from Figure 1, but with the effects of inflation.



The equation for calculating the future cost for an item is:

$$\text{Future Cost} = \text{Present Cost} \times \underbrace{(1 + \text{inflation rate})^t}_{\text{Inflation Factor}} \quad \text{where } t = \text{number of years.}$$

The present worth of a future transaction is:

$$\text{Present Worth} = \text{Future Cost} \times \underbrace{(1 + \text{interest rate})^{-t}}_{\text{Discount Factor}}$$

**Car Example 2:** You decide that you want to purchase a new vehicle in 5 years. The 2000 model is currently selling for \$20,000 (in Year 2000 dollars). With 2% inflation you can assume that when you buy the new 2005 model it is going to cost \$22,082 (in Year 2005 dollars). Today, if you deposit \$16,269 (Year 2000 dollars) in an account that generates 6.3% interest and the account balance is allowed to accumulate, you would have enough money for the new vehicle in 5 years. \$16,269 (in Year 2000 dollars) is the present worth of the 2005 model.

The associated calculations are:

$$\text{Future Cost} = \$20,000 \times (1 + 0.02)^5 = \$22,082$$

$$\text{Present Worth} = \$22,082 \times (1 + 0.063)^{-5} = \$16,269$$

#### 5.4 Salvage Value

The salvage value is the value of an item at the end of the life span. The straight-line method of depreciation is the method that is used to determine the salvage value for this project. This method states the value of an item decreases in value at a constant rate until it reaches the end of its life span, at which point in time the value of the item is zero. Hence, when the item is halfway through the life span, the item is worth half of its original price. When the item is 75% through its life, its salvage value is 25% of its original price.

$$\text{Salvage Value} = \text{Cost of Item} \times (1 - n / \text{Life of Item})$$

where  $n$  = the time at which the salvage value is calculated.

**Car Example 3:** An item is purchased for \$1,000. It has a life span of 50 years and zero salvage value at the end of its life. If you sold the item in 20 years the salvage value of the item would be \$600.

Calculations:

$$\text{Salvage Value in 20 years} = \$1,000 \times (1 - 20 / 50) = \$600$$

In the example above, a salvage value is calculated for an item that is purchased and sold. There is also salvage value associated with periodic maintenance. An item is worth more if it is maintained. The value of the maintenance performed is greater immediately after it is maintained and the value diminishes as you get closer to the next required maintenance. The straight-line method of depreciation described above is also used to determine the salvage value of periodic maintenance.

**Car Example 4:** You own an old car in desperate need of a new engine. The cost of purchasing and installing a new engine is \$5,000. The engine must be replaced every 15 years. If the car is sold 5 years after the engine is replaced, the salvage value the new engine adds to the value of the car is \$3,333.

Calculations:

Periodic Maintenance Cost = \$5,000

Salvage Value in 5 years =  $\$5,000 \times (1 - 5/15) = \$3,333$

## 6.0 Calculating Life Cycle Costs for Gravina Access Project

Life cycle costs for the Gravina Access Project alternatives were determined using the present worth value for the Life Cycle Cost analysis. Because construction was scheduled to start in the Year 2003, the life cycle costs for all alternatives were computed in Year 2003 dollars.

The calculations were performed using a cash flow diagram in constant 2003 dollars. For example, repaving of the bridges is planned to occur once every 10 years at a cost of \$13 per square meter (2003 dollars). This means that at Years 2026, 2046, 2066, etc., an expense of \$13 per square meter will be included as a project expense. Present worth is calculated using a nominal interest rate of 6.3% and an inflation rate of 2% for all alternatives.<sup>1</sup> The table below shows life cycle costs corresponding to early cost estimates for the original list of 18 alternatives.

Alternative	Total Estimated Project Cost (\$ million)	Total Life Cycle Cost (\$ million)	Annual Average O&M Cost* (\$ million)
A1	268.8	261.1	0.18
B1	384.9	372.4	0.17
C1	242.0	235.0	0.15
C2	205.3	199.8	0.15
C3	145.8	142.7	0.16
C4	152.5	149.1	0.15
D1	89.2	87.8	0.12
D2	248.7	246.6	0.44
E1	262.6	311.1	3.03
E2	350.2	397.2	3.12
F1	205.8	201.2	0.21

<sup>1</sup> Federal Highway Administration – Office of management and Budget (OMB) Circular No. A-94, Appendix C. January 2000.

Alternative	Total Estimated Project Cost (\$ million)	Total Life Cycle Cost (\$ million)	Annual Average O&M Cost* (\$ million)
F1 (cable)	210.9	207.9	0.30
F2	553.2	594.6	3.26
F3	181.6	177.9	0.21
G1	71.5	155.8	4.99
G2	66.2	150.4	4.97
G3	47.1	131.9	4.95
G4	42.7	127.6	4.95

\*Includes annual O&M cost as well as annual contribution to fund periodic maintenance rehabilitation costs

The same evaluation period was used for all alternatives so that the comparison between alternatives is fair. The project period used for this evaluation is 20 years. Hence, for the Gravina Access Project, the 20-year life span starts at the beginning of Year 2006 and terminates at the end of 2025. The table below shows life cycle costs for the nine reasonable alternatives after they were screened from, and more fully developed, than the original 18 alternatives.

Alternative	Total Estimate Project Cost (\$ million)	Total Life Cycle Costs (\$ million)	Annual Average O&M Costs <sup>1</sup> (\$ million)
C3(a)-200	199	158	0.15
C3(b)-120	168	133	0.16
C4-200	195	158	0.15
D1-120	133	106	0.13
F1-200	230	191	0.11
F3-200 <sup>2</sup>	207	168	0.11
G2	60	90	4.98
G3	68	98	4.98
G4	58	88	4.97

<sup>1</sup> Includes annual O&M cost as well as annual contribution to fund periodic maintenance rehabilitation costs

<sup>2</sup> Assumes channel modification would be required

As is commonly done in life cycle cost studies, the salvage value at the end of the project life span for structures such as bridges and tunnels is established using a straight-line method of depreciation, based on the life of the structure.

**Initial Cost of Construction:** Construction is expected to begin in 2003 and to last for approximately three years. The initial cost of construction and project development was

distributed over the construction period and occurs at the beginning of the year (2003 to 2005). Construction is expected to be complete at the end of 2005.

**Annual Operating and Maintenance Costs:** Annual costs are lumped at the end of the year beginning at the end of 2006 (beginning of 2007) and the final cost occurs at the end of 2025 (beginning of 2026).

**Periodic Maintenance Costs:** Periodic maintenance costs include repaving, mechanical/electrical equipment replacement, and terminal maintenance. Each of these maintenance items occurs at its respective frequency  $f$ . The first cost occurs  $f$  years after the beginning of 2006. Salvage value of the periodic maintenance costs after the 20<sup>th</sup> year is determined using the straight-line method of depreciation.

**Structure Options:** The proposed bridges have an expected life of 100 years. Salvage value for bridges after the 20<sup>th</sup> year is determined using the straight-line method of depreciation.

**Ferry Options:** It was assumed that with proper maintenance, the useful life of the proposed ferry vessels is 50 years. It was assumed that the ferry vessel has zero salvage value at the end of its 50-year life. It was assumed that one of the existing ferry vessels will be replaced at the beginning of the project life in 2006 and that the other existing ferry vessel will be replaced at the 10<sup>th</sup> year of the project life. The salvage value of all the ferry vessels at the end of the 20-year project life was calculated using the straight-line method of depreciation.

## 6.1 Summary of Alternatives and their Cash Flow Components (in constant Year 2003 dollars)

### Bridge alternatives

- Initial Cost of Construction
- Annual Operating and Maintenance Costs
- Periodic Maintenance Costs:
  - Repaving
- Salvage Value
  - Value of periodic maintenance costs after the 20<sup>th</sup> year.
  - Value of bridges after the 20<sup>th</sup> year

### Moveable Bridge alternatives

- Initial Cost of Construction
- Annual Operating and Maintenance Costs
- Periodic Maintenance Costs:
  - Repaving
  - Electrical equipment replacement on moveable bridges
- Salvage Value
  - Value of periodic maintenance costs after the 20<sup>th</sup> year.

- Value of bridges after the 20<sup>th</sup> year

Ferry alternatives

- Initial Cost of Construction
  - Construction
  - Ferry system acquisition
- Annual Operating and Maintenance Costs
- Periodic Maintenance Costs:
  - Repaving
  - Marine terminal fender/dolphin replacement cost
  - Ferry main propulsion and generator replacement costs
  - Existing ferry replacement at the 10<sup>th</sup> year
  - Salvage value
  - Value of periodic maintenance costs after the 20<sup>th</sup> year.
  - Value of vessel after the 20<sup>th</sup> year.

**ATTACHMENT**  
**Cost Estimates**



## GRAVINA ACCESS PROJECT

### Cost Summary

8/29/2002

<b>Airport Access</b>			
Alignment	Construction Cost	Program Development Cost	Construction & Program Development Total Cost
	(\$ Million)	(\$ Million)	(\$ Million)
C3(a) - 200	128	47	175
C3(b) - 120	105	38	143
C4 - 200	125	46	171
D1-120	79	28	107
F1 - 200	154	56	210
F3 - 200	138	49	187
G2	35	14	49
G3	31	16	47
G4	23	9	32

<b>Developable Land Access</b>			
Alignment	Construction Cost	Program Development Cost	Construction & Program Development Total Cost
	(\$ Million)	(\$ Million)	(\$ Million)
C3(a) - 200	10	3	13
C3(b) - 120	10	4	14
C4 - 200	10	3	13
D1-120	11	4	15
F1 - 200	6	3	9
F3 - 200	7	2	9
G2	0	0	0
G3	7	3	10
G4	11	4	15

<b>Future Airport Development</b>			
All Alternatives	Construction Cost	Program Development Cost	Construction & Program Development Total Cost
	(\$ Million)	(\$ Million)	(\$ Million)
300 Stall Garage	8	3	11

<b>Grand Totals</b>			
Alignment	Construction Cost	Program Development Cost	Construction & Program Development Total Cost
	(\$ Million)	(\$ Million)	(\$ Million)
C3(a) - 200	146	53	199
C3(b) - 120	123	45	168
C4 - 200	143	52	195
D1-120	98	35	133
F1 - 200	168	62	230
F3 - 200	153	54	207
G2	43	17	60
G3	46	22	68
G4	42	16	58

<b>Rounded Grand Totals (Nearest \$5 Million)</b>			
Alignment	Construction Cost	Program Development Cost	Construction & Program Development Total Cost
	(\$ Million)	(\$ Million)	(\$ Million)
C3(a) - 200	145	55	200
C3(b) - 120	125	45	170
C4 - 200	145	50	195
D1-120	100	35	135
F1 - 200	170	60	230
F3 - 200	155	55	210
G2	45	15	60
G3	45	20	65
G4	40	15	55

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>C3(a) - <i>Airport Access</i></b>			
			<b>200' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 1
Width Clearing & Grubbing (m) - Wc = 35			Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa = 4.39			0+000	0+000	0	
Unit Weight Aggregate Base Course (Megagram/m) - Wb = 4.75			11+500	11+768	268	
Unit Weight Gravel Borrow (Megagram/m) - Ws = 10.30			13+503	14+372	869	
Length Culvert Crossings (m) - Lc = 40			0+000	0+000	0	
Width Creek Crossing Bridge (m) - Wbr = 12			0+000	0+000	0	
Width of Right of Way (m) - Wr = 50			Creek Crossing Bridges (m) =		0	
Contingency Line O (%) - Co = 15.0%			Length Road - Bridges (m) =		1137	
<b>CONCEPT COST ESTIMATE</b>			# Bridges =	1		
			#Tunnels =	0		
			# Culvert Crossings =	2		
			#Bridge Creek Crossings =	0		
	<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing	HECTARES	\$11,000	4	\$44,000	5.0%	\$46,000
2. Common Excavation	CUBIC METER	\$9	0	\$0	10.0%	\$0
3. Rock Excavation	CUBIC METER	\$13	154600	\$2,010,000	10.0%	\$2,211,000
4. Borrow	CUBIC METER	\$12	171600	\$2,059,000	10.0%	\$2,265,000
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	4992	\$225,000	2.5%	\$231,000
2. Aggregate Base Course	MEGAGRAM	\$24	5401	\$130,000	5.0%	\$137,000
3. Gravel Borrow	MEGAGRAM	\$12	11712	\$141,000	10.0%	\$155,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	300	\$60,000	1.0%	\$61,000
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	\$2,153	25331	\$54,532,000	10.0%	\$59,985,000
b. Substructure						
i. Deep Water	LUMP SUM	\$13,629,820	1	\$13,630,000	25.0%	\$17,038,000
ii. Shallow Water	SQUARE METER	\$1,615	7095.6	\$11,459,000	25.0%	\$14,324,000
iii. Over Land	SQUARE METER	\$1,076	12826.1	\$13,801,000	25.0%	\$17,251,000
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$1,615	0	\$0	0.0%	\$0
3. Other Drainage						
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	1137	\$114,000	15.0%	\$131,000
<b>E TRAFFIC SERVICES</b>						
	LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport	LUMP SUM	\$181,500	1	\$182,000	10.0%	\$200,000
2. Connection to Ketchikan	LUMP SUM	\$121,000	1	\$121,000	10.0%	\$133,000
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$6,027,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$361,620	1	\$362,000		\$362,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)	LUMP SUM	\$180,810	1	\$181,000		\$181,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$1,506,750	1	\$1,507,000		\$1,507,000
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$8,077,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth	SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	\$0	0	\$0	0.0%	\$0
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$116,675,000</b>
<b>L MOBILIZATION (10% of Line K)</b>						
	LUMP SUM	\$11,667,500	1	\$11,668,000		\$11,668,000
<b>M Ferry System Acquisition Cost</b>						
	LUMP SUM	\$0	0	\$0	0.0%	\$0
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$128,343,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>						
	LUMP SUM	\$19,251,450	1	\$19,251,000		\$19,251,000
<b>P MITIGATION (2% of Line N)</b>						
	LUMP SUM	\$2,566,860	1	\$2,000,000		\$2,000,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>						
	LUMP SUM	\$10,267,440	1	\$10,267,000		\$10,267,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>						
	LUMP SUM	\$14,117,730	1	\$14,118,000		\$14,118,000
<b>S RIGHT OF WAY</b>						
	LUMP SUM	\$587,172	1	\$587,000		\$587,000
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$175,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>C3(a) - Development Access</b>			
			<b>200' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 2
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =		
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	10+000	11+500	1500	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	0+000	0+000	0	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0	
Length Culvert Crossings (m) - Lc =		40	15+325	18+557	3232	
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0	
Width of Right of Way (m) - Wr =		50		Creek Crossing Bridges (m) =	55	
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	4677	
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	3	
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
						<b>TOTAL</b>
						<b>ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing		HECTARES	\$11,000	16.4	\$180,000	5.0%
2. Common Excavation		CUBIC METER	\$9	193600	\$1,742,000	10.0%
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	20533	\$924,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	22216	\$533,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	48174	\$578,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	1232	\$246,400	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	4677	\$468,000	15.0%
b. Airport Access		METER	\$100	0	\$0	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$6,558,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$393,480	1	\$393,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$196,740	1	\$197,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,639,500	1	\$1,640,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$8,788,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$8,788,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$878,800	1	\$879,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$9,667,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$1,450,050	1	\$1,450,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$193,340	1	\$193,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$773,360	1	\$773,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$1,063,370	1	\$1,063,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$13,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>C3(b) - Airport Access</b>			
			<b>120' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 3
Width Clearing & Grubbing (m) - Wc =		35	Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	0+000	0+000	0	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	11+500	12+239	739	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	13+536	14+361	825	
Length Culvert Crossings (m) - Lc =		40	0+000	0+000	0	
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0	
Width of Right of Way (m) - Wr =		50	Creek Crossing Bridges (m) =		0	
Contingency Line O (%) - Co =		15.0%	Length Road - Bridges (m) =		1564	
<b>CONCEPT COST ESTIMATE</b>			# Bridges =	1		
			#Tunnels =	0		
			# Culvert Crossings =	2		
			#Bridge Creek Crossings =	0		
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
						<b>TOTAL</b>
						<b>ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing		HECTARES	\$11,000	5.5	\$61,000	5.0%
2. Common Excavation		CUBIC METER	\$9	4300	\$39,000	10.0%
3. Rock Excavation		CUBIC METER	\$13	104100	\$1,353,000	10.0%
4. Borrow		CUBIC METER	\$12	103800	\$1,246,000	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	6866	\$309,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	7429	\$178,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	16110	\$193,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	412	\$82,400	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$2,153	18.936	\$40,766,000	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$16,410,000	1	\$16,410,000	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	7,981	\$12,889,000	25.0%
iii. Over Land		SQUARE METER	\$1,076	5,845	\$6,289,000	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	0	\$0	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	0	\$0	15.0%
b. Airport Access		METER	\$100	1564	\$156,000	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	1	\$121,000	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$4,534,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$272,040	1	\$272,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$136,020	1	\$136,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,133,500	1	\$1,134,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$6,076,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$95,404,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$9,540,400	1	\$9,540,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$104,944,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$15,741,600	1	\$15,742,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$2,098,880	1	\$2,000,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$8,395,520	1	\$8,396,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$11,543,840	1	\$11,544,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$850,917	1	\$851,000	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$143,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>C3(b) - Development Access</b>			
			<b>120' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 4
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =		
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	10+000	11+500	1500	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	0+000	0+000	0	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0	
Length Culvert Crossings (m) - Lc =		40	15+325	18+557	3232	
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0	
Width of Right of Way (m) - Wr =		50		Creek Crossing Bridges (m) =	55	
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	4677	
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	3	
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
						<b>TOTAL</b>
						<b>ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing		HECTARES	\$11,000	16.4	\$180,000	5.0%
2. Common Excavation		CUBIC METER	\$9	163700	\$1,473,000	10.0%
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%
4. Borrow		CUBIC METER	\$12	38900	\$467,000	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	20533	\$924,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	22216	\$533,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	48174	\$578,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	1232	\$246,400	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	4677	\$468,000	15.0%
b. Airport Access		METER	\$100	0	\$0	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$6,776,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$406,560	1	\$407,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$203,280	1	\$203,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,694,000	1	\$1,694,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$9,080,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$9,080,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$908,000	1	\$908,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$9,988,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$1,498,200	1	\$1,498,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$199,760	1	\$200,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$799,040	1	\$799,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$1,098,680	1	\$1,099,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$14,000,000</b>

GRAVINA ACCESS PROJECT		OPTION :	C4 - <i>Airport Access</i>			
			200' BRIDGE CLEARANCE			
		7/29/2003 7:36				Page 5
	Width Clearing & Grubbing (m) - Wc =	35		Roadway (m) =		
	Unit Weight Asphalt (Megagram/m) - Wa =	4.39	0+000	0+000	0	
	Unit Weight Aggregate Base Course (Megagram/m) - Wb =	4.75	11+500	11+768	268	
	Unit Weight Gravel Borrow (Megagram/m) - Ws =	10.30	13+288	14+133	845	
	Length Culvert Crossings (m) - Lc =	40	0+000	0+000	0	
	Width Creek Crossing Bridge (m) - Wbr =	12	0+000	0+000	0	
	Width of Right of Way (m) - Wr =	50	Creek Crossing Bridges (m) =		0	
	Contingency Line O (%) - Co =	15.0%	Length Road - Bridges (m) =		1113	
CONCEPT COST ESTIMATE				# Bridges =	1	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	0	
						TOTAL
		UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY
A EARTHWORK						ITEM COST
1. Clearing and Grubbing	HECTARES	\$11,000	3.9	\$43,000	5.0%	\$45,000
2. Common Excavation	CUBIC METER	\$9	0	\$0	10.0%	\$0
3. Rock Excavation	CUBIC METER	\$13	568000	\$7,384,000	10.0%	\$8,122,000
4. Borrow	CUBIC METER	\$12	215200	\$2,582,000	10.0%	\$2,840,000
B SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	4887	\$220,000	2.5%	\$226,000
2. Aggregate Base Course	MEGAGRAM	\$24	5287	\$127,000	5.0%	\$133,000
3. Gravel Borrow	MEGAGRAM	\$12	11464	\$138,000	10.0%	\$152,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	294	\$58,800	1.0%	\$59,000
C STRUCTURES						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	\$2,153	22192	\$47,775,000	10.0%	\$52,553,000
b. Substructure						
i. Deep Water	LUMP SUM	\$13,629,820	1	\$13,630,000	25.0%	\$17,038,000
ii. Shallow Water	SQUARE METER	\$1,615	6935	\$11,200,000	25.0%	\$14,000,000
iii. Over Land	SQUARE METER	\$1,076	9971	\$10,728,000	25.0%	\$13,410,000
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
D DRAINAGE						
1. Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$1,615	0	\$0	0.0%	\$0
3. Other Drainage						
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	1113	\$111,000	15.0%	\$128,000
E TRAFFIC SERVICES		LUMP SUM	\$250,000	1	\$250,000	0.0%
F MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	1	\$182,000	10.0%	\$200,000
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)						\$12,362,000
H MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$741,720	1	\$742,000		\$742,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)	LUMP SUM	\$370,860	1	\$371,000		\$371,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$3,090,500	1	\$3,091,000		\$3,091,000
I SUB TOTAL (Lines G through H)						\$16,566,000
J FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	\$0	0	\$0	0.0%	\$0
K SUB TOTAL (Lines A through F, H & J)						\$113,567,000
L MOBILIZATION (10% of Line K)		LUMP SUM	\$11,356,700	1	\$11,357,000	\$11,357,000
M Ferry System Acquisition Cost		LUMP SUM	\$0	0	\$0	0.0%
N SUB TOTAL (Lines K through M)						\$124,924,000
O CONTINGENCIES (15% of Lines N)		LUMP SUM	\$18,738,600	1	\$18,739,000	\$18,739,000
P MITIGATION (2% of Line N)		LUMP SUM	\$2,498,480	1	\$2,000,000	\$2,000,000
Q ENGINEERING/ADMINISTRATION (8% of Line N)		LUMP SUM	\$9,993,920	1	\$9,994,000	\$9,994,000
R CONSTRUCTION MANAGEMENT (11% of Line N)		LUMP SUM	\$13,741,640	1	\$13,742,000	\$13,742,000
S RIGHT OF WAY		LUMP SUM	\$1,585,154	1	\$1,585,000	\$1,585,000
T TOTAL ESTIMATED COST (Lines N through S)						\$171,000,000

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>C4 - Development Access</b>			
			<b>200' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 6
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =		
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	10+000	11+500	1500	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	0+000	0+000	0	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0	
Length Culvert Crossings (m) - Lc =		40	15+325	18+557	3232	
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0	
Width of Right of Way (m) - Wr =		50		Creek Crossing Bridges (m) =	55	
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	4677	
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	3	
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
						<b>TOTAL</b>
						<b>ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing		HECTARES	\$11,000	16.4	\$180,000	5.0%
2. Common Excavation		CUBIC METER	\$9	157400	\$1,417,000	10.0%
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%
4. Borrow		CUBIC METER	\$12	26400	\$317,000	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	20533	\$924,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	22216	\$533,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	48174	\$578,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	1232	\$246,400	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	4677	\$468,000	15.0%
b. Airport Access		METER	\$100	0	\$0	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$6,550,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$393,000	1	\$393,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$196,500	1	\$197,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,637,500	1	\$1,638,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$8,778,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$8,778,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$877,800	1	\$878,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$9,656,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$1,448,400	1	\$1,448,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$193,120	1	\$193,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$772,480	1	\$772,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$1,062,160	1	\$1,062,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$13,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>D1 - <i>Airport Access</i></b>			
			<b>120' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 7
Width Clearing & Grubbing (m) - Wc = <u>35</u>			Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa = <u>4.39</u>		<u>0+000</u>	<u>0+000</u>	<u>0</u>		
Unit Weight Aggregate Base Course (Megagram/m) - Wb = <u>4.75</u>		<u>11+500</u>	<u>11+602</u>	<u>102</u>		
Unit Weight Gravel Borrow (Megagram/m) - Ws = <u>10.30</u>		<u>12+582</u>	<u>13+155</u>	<u>573</u>		
Length Culvert Crossings (m) - Lc = <u>40</u>		<u>0+000</u>	<u>0+000</u>	<u>0</u>		
Width Creek Crossing Bridge (m) - Wbr = <u>12</u>		<u>0+000</u>	<u>0+000</u>	<u>0</u>		
Width of Right of Way (m) - Wr = <u>50</u>		Creek Crossing Bridges (m) =		<u>0</u>		
Contingency Line O (%) - Co = <u>15.0%</u>		Length Road - Bridges (m) =		675		
<b>CONCEPT COST ESTIMATE</b>			# Bridges = <u>1</u>			
			#Tunnels = <u>0</u>			
			# Culvert Crossings = <u>2</u>			
			#Bridge Creek Crossings = <u>0</u>			
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
<b>A EARTHWORK</b>						<b>TOTAL</b>
1. Clearing and Grubbing	HECTARES	\$11,000	2.4	\$26,000	5.0%	\$27,000
2. Common Excavation	CUBIC METER	\$9	<u>0</u>	\$0	10.0%	\$0
3. Rock Excavation	CUBIC METER	\$13	<u>350400</u>	\$4,555,000	10.0%	\$5,011,000
4. Borrow	CUBIC METER	\$12	<u>226200</u>	\$2,714,000	10.0%	\$2,985,000
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	2964	\$133,000	2.5%	\$136,000
2. Aggregate Base Course	MEGAGRAM	\$24	3207	\$77,000	5.0%	\$81,000
3. Gravel Borrow	MEGAGRAM	\$12	6953	\$83,000	10.0%	\$91,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	178	\$35,600	1.0%	\$36,000
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	\$2,153	14308	\$30,802,000	10.0%	\$33,882,000
b. Substructure						
i. Deep Water	LUMP SUM	\$10,260,000	1	\$10,260,000	25.0%	\$12,825,000
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land	SQUARE METER	\$1,076	9334	\$10,044,000	25.0%	\$12,555,000
2. Moveable Bridge	SQUARE METER	\$0	<u>0</u>	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	<u>0</u>	\$0	0.0%	\$0
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$1,615	0	\$0	0.0%	\$0
3. Other Drainage						
a. Development Access	METER	\$100	0	\$0	15.0%	\$0
b. Airport Access	METER	\$100	675	\$68,000	15.0%	\$78,000
<b>E TRAFFIC SERVICES</b>	LUMP SUM	\$250,000	<u>1</u>	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport	LUMP SUM	\$181,500	<u>1</u>	\$182,000	10.0%	\$200,000
2. Connection to Ketchikan	LUMP SUM	\$121,000	<u>0</u>	\$0	10.0%	\$0
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$9,102,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$546,120	<u>1</u>	\$546,000		\$546,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)	LUMP SUM	\$273,060	<u>1</u>	\$273,000		\$273,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$2,275,500	<u>1</u>	\$2,276,000		\$2,276,000
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$12,197,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$71,459,000</b>
<b>L MOBILIZATION (10% of Line K)</b>	LUMP SUM	\$7,145,900	1	\$7,146,000		\$7,146,000
<b>M Ferry System Acquisition Cost</b>	LUMP SUM	<u>\$0</u>	<u>0</u>	\$0	0.0%	\$0
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$78,605,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>	LUMP SUM	\$11,790,750	1	\$11,791,000		\$11,791,000
<b>P MITIGATION (2% of Line N)</b>	LUMP SUM	\$1,572,100	1	\$1,572,000		\$1,572,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>	LUMP SUM	\$6,288,400	1	\$6,288,000		\$6,288,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>	LUMP SUM	\$8,646,550	1	\$8,647,000		\$8,647,000
<b>S RIGHT OF WAY</b>	LUMP SUM	<u>\$241,395</u>	<u>1</u>	\$241,000		\$241,000
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$107,000,000</b>



GRAVINA ACCESS PROJECT		OPTION :	D1 - Development Access			
			120' BRIDGE CLEARANCE			
		7/29/2003 7:36				Page 8
	Width Clearing & Grubbing (m) - Wc =	35		Roadway (m) =		
	Unit Weight Asphalt (Megagram/m) - Wa =	4.39	10+000	11+500	1500	
	Unit Weight Aggregate Base Course (Megagram/m) - Wb =	4.75	0+000	0+000	0	
	Unit Weight Gravel Borrow (Megagram/m) - Ws =	10.30	0+000	0+000	0	
	Length Culvert Crossings (m) - Lc =	40	15+325	18+557	3232	
	Width Creek Crossing Bridge (m) - Wbr =	12	0+000	0+000	0	
	Width of Right of Way (m) - Wr =	50	Creek Crossing Bridges (m) =		55	
	Contingency Line O (%) - Co =	15.0%	Length Road - Bridges (m) =		4677	
CONCEPT COST ESTIMATE				# Bridges =	0	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	3	
		UNITS	UNIT COST	QUANTITY	COST	CONTINGENCY
						TOTAL
A EARTHWORK						ITEM COST
1. Clearing and Grubbing	HECTARES	\$11,000	16.4	\$180,000	5.0%	\$189,000
2. Common Excavation	CUBIC METER	\$9	167400	\$1,507,000	10.0%	\$1,658,000
3. Rock Excavation	CUBIC METER	\$13	0	\$0	10.0%	\$0
4. Borrow	CUBIC METER	\$12	72300	\$868,000	10.0%	\$955,000
B SURFACING / PAVING						
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	20533	\$924,000	2.5%	\$947,000
2. Aggregate Base Course	MEGAGRAM	\$24	22216	\$533,000	5.0%	\$560,000
3. Gravel Borrow	MEGAGRAM	\$12	48174	\$578,000	10.0%	\$636,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	1232	\$246,400	1.0%	\$249,000
C STRUCTURES						
1. Bridges (See above for number)						
a. Superstructure.	SQUARE METER	\$0	0	\$0	10.0%	\$0
b. Substructure						
i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
D DRAINAGE						
1. Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$1,615	660	\$1,066,000	0.0%	\$1,066,000
3. Other Drainage						
a. Development Access	METER	\$100	4677	\$468,000	15.0%	\$538,000
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0
E TRAFFIC SERVICES		LUMP SUM	\$250,000	1	\$250,000	0.0%
F MISCELLANEOUS ROADS						
1. Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0
G SUB TOTAL (Lines A, B, D through F)						\$7,255,000
H MISCELLANEOUS ROADWAY ITEMS						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$435,300	1	\$435,000		\$435,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)	LUMP SUM	\$217,650	1	\$218,000		\$218,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$1,813,750	1	\$1,814,000		\$1,814,000
I SUB TOTAL (Lines G through H)						\$9,722,000
J FERRY TERMINAL						
1. Passenger Shelter & Ticket Booth	SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving	SQUARE METER	\$0	0	\$0	0.0%	\$0
K SUB TOTAL (Lines A through F, H & J)						\$9,722,000
L MOBILIZATION (10% of Line K)		LUMP SUM	\$972,200	1	\$972,000	\$972,000
M Ferry System Acquisition Cost		LUMP SUM	\$0	0	\$0	0.0%
N SUB TOTAL (Lines K through M)						\$10,694,000
O CONTINGENCIES (15% of Lines N)		LUMP SUM	\$1,604,100	1	\$1,604,000	\$1,604,000
P MITIGATION (2% of Line N)		LUMP SUM	\$213,880	1	\$214,000	\$214,000
Q ENGINEERING/ADMINISTRATION (8% of Line N)		LUMP SUM	\$855,520	1	\$856,000	\$856,000
R CONSTRUCTION MANAGEMENT (11% of Line N)		LUMP SUM	\$1,176,340	1	\$1,176,000	\$1,176,000
S RIGHT OF WAY		LUMP SUM	\$0	1	\$0	\$0
T TOTAL ESTIMATED COST (Lines N through S)						\$15,000,000

GRAVINA ACCESS PROJECT		OPTION :	F3 - <i>Airport Access</i>			
			200' BRIDGE CLEARANCE			
		7/29/2003 7:36				Page 9
	Width Clearing & Grubbing (m) - Wc = <u>35</u>			Roadway (m) =		
	Unit Weight Asphalt (Megagram/m) - Wa = <u>4.39</u>		<u>10+000</u>	<u>12+080</u>	2080	
	Unit Weight Aggregate Base Course (Megagram/m) - Wb = <u>4.75</u>		<u>11+489</u>	<u>15+023</u>	3534	
	Unit Weight Gravel Borrow (Megagram/m) - Ws = <u>10.30</u>		<u>510+000</u>	<u>510+755</u>	755	
	Length Culvert Crossings (m) - Lc = <u>40</u>		<u>511+966</u>	<u>513+220</u>	1254	
	Width Creek Crossing Bridge (m) - Wbr = <u>12</u>		<u>10+960</u>	<u>11+150</u>	190	
	Width of Right of Way (m) - Wr = <u>50</u>		Creek Crossing Bridges (m) =		<u>70</u>	
	Contingency Line O (%) - Co = <u>15.0%</u>		Length Road - Bridges (m) =		7743	
CONCEPT COST ESTIMATE				# Bridges = <u>1</u>		
				#Tunnels = <u>0</u>		
				# Culvert Crossings = <u>#</u>		
				#Bridge Creek Crossings = <u>2</u>		

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>F3 - Development Access</b>			
			<b>200' BRIDGE CLEARANCE</b>			
		7/29/2003 7:36				Page 10
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =		
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	0+000	0+000	0	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	0+000	0+000	0	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0	
Length Culvert Crossings (m) - Lc =		40	15+325	18+557	3232	
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0	
Width of Right of Way (m) - Wr =		50		Creek Crossing Bridges (m) =	55	
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	3177	
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	3	
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
						<b>TOTAL</b>
						<b>ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing		HECTARES	\$11,000	12.4	\$136,000	5.0%
2. Common Excavation		CUBIC METER	\$9	60000	\$540,000	10.0%
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	13948	\$628,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	15091	\$362,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	48000	\$576,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	837	\$167,400	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	3177	\$318,000	15.0%
b. Airport Access		METER	\$100	0	\$0	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$4,453,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$267,180	1	\$267,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$133,590	1	\$134,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,113,250	1	\$1,113,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$5,967,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$5,967,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$596,700	1	\$597,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$6,564,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$984,600	1	\$985,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$131,280	1	\$131,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$525,120	1	\$525,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$722,040	1	\$722,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$9,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>G2 -</b>	<i>Airport Access</i>			
				<b>FERRY</b>			
		7/29/2003 7:36					Page 11
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	15+325	19+250	3925		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	10+000	11+843	1843		
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0		
Length Culvert Crossings (m) - Lc =		40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0		
Width of Right of Way (m) - Wr =		50		Bridges (m) =	55		
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	5713		
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0		
				#Tunnels =	0		
				# Culvert Crossings =	2		
				#Bridge Creek Crossings =	3		
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL ITEM COST</b>
<b>A EARTHWORK</b>							
1. Clearing and Grubbing		HECTARES	\$11,000	20	\$220,000	5.0%	\$231,000
2. Common Excavation		CUBIC METER	\$9	255000	\$2,295,000	10.0%	\$2,525,000
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%	\$0
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%	\$0
<b>B SURFACING / PAVING</b>							
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	25081	\$1,129,000	2.5%	\$1,157,000
2. Aggregate Base Course		MEGAGRAM	\$24	27137	\$651,000	5.0%	\$684,000
3. Gravel Borrow		MEGAGRAM	\$12	58844	\$706,000	10.0%	\$777,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	1505	\$301,000	1.0%	\$304,000
<b>C STRUCTURES</b>							
1. Bridges (See above for number)							
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%	\$0
b. Substructure							
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
<b>D DRAINAGE</b>							
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%	\$1,066,000
3. Other Drainage							
a. Development Access		METER	\$100	0	\$0	15.0%	\$0
b. Airport Access		METER	\$100	5713	\$571,000	15.0%	\$657,000
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>							
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%	\$0
<b>G SUB TOTAL (Lines A, B, D through F)</b>							<b>\$7,858,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>							
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$471,480	1	\$471,000		\$471,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$235,740	1	\$236,000		\$236,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,964,500	1	\$1,965,000		\$1,965,000
<b>I SUB TOTAL (Lines G through H)</b>							<b>\$10,530,000</b>
<b>J FERRY TERMINAL</b>							
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$1,100	300	\$330,000	0.0%	\$330,000
2. Earthworks, Surfacing, Paving		SQUARE METER	\$65	23100	\$1,502,000	0.0%	\$1,502,000
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>							<b>\$12,362,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$1,236,200	1	\$1,236,000		\$1,236,000
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$21,560,000	1	\$21,560,000	0.0%	\$21,560,000
<b>N SUB TOTAL (Lines K through M)</b>							<b>\$35,158,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$5,273,700	1	\$5,274,000		\$5,274,000
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$703,160	1	\$703,000		\$703,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$2,812,640	1	\$2,813,000		\$2,813,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$3,867,380	1	\$3,867,000		\$3,867,000
<b>S RIGHT OF WAY</b>		LUMP SUM	\$1,016,328	1	\$1,016,000		\$1,016,000
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>							<b>\$49,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>G2 - Development Access</b>				
			<b>FERRY</b>				
		7/29/2003 7:36					Page 12
Width Clearing & Grubbing (m) - Wc = 35			Roadway (m) =				
Unit Weight Asphalt (Megagram/m) - Wa = 4.39		0+000	0+000	0			
Unit Weight Aggregate Base Course (Megagram/m) - Wb = 4.75		0+000	0+000	0			
Unit Weight Gravel Borrow (Megagram/m) - Ws = 10.30		0+000	0+000	0			
Length Culvert Crossings (m) - Lc = 40		0+000	0+000	0			
Width Creek Crossing Bridge (m) - Wbr = 12		0+000	0+000	0			
Width of Right of Way (m) - Wr = 50			Bridges (m) =	0			
Contingency Line O (%) - Co = 15.0%			Length Road - Bridges (m) = 0				
<b>CONCEPT COST ESTIMATE</b>			# Bridges = 0				
			#Tunnels = 0				
			# Culvert Crossings = 0				
			#Bridge Creek Crossings = 0				
	<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL ITEM COST</b>	
<b>A EARTHWORK</b>							
1. Clearing and Grubbing		HECTARES	\$11,000	0	\$0	5.0%	\$0
2. Common Excavation		CUBIC METER	\$9	0	\$0	10.0%	\$0
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%	\$0
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%	\$0
<b>B SURFACING / PAVING</b>							
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	0	\$0	2.5%	\$0
2. Aggregate Base Course		MEGAGRAM	\$24	0	\$0	5.0%	\$0
3. Gravel Borrow		MEGAGRAM	\$12	0	\$0	10.0%	\$0
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	0	\$0	1.0%	\$0
<b>C STRUCTURES</b>							
1. Bridges (See above for number)							
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%	\$0
b. Substructure							
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
<b>D DRAINAGE</b>							
1. Culvert Crossings (See above for number)		METER	\$500	0	\$0	15.0%	\$0
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	0	\$0	0.0%	\$0
3. Other Drainage							
a. Development Access		METER	\$100	0	\$0	15.0%	\$0
b. Airport Access		METER	\$100	0	\$0	15.0%	\$0
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	0	\$0	0.0%	\$0
<b>F MISCELLANEOUS ROADS</b>							
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%	\$0
<b>G SUB TOTAL (Lines A, B, D through F)</b>							<b>\$0</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>							
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$0	1	\$0		\$0
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$0	1	\$0		\$0
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$0	1	\$0		\$0
<b>I SUB TOTAL (Lines G through H)</b>							<b>\$0</b>
<b>J FERRY TERMINAL</b>							
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%	\$0
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>							<b>\$0</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$0	1	\$0		\$0
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%	\$0
<b>N SUB TOTAL (Lines K through M)</b>							<b>\$0</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$0	1	\$0		\$0
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$0	1	\$0		\$0
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$0	1	\$0		\$0
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$0	1	\$0		\$0
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0		\$0
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>							<b>\$0</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>G3 -</b>	<i>Airport Access</i>			
				<b>FERRY</b>			
		7/29/2003 7:36					Page 13
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	14+135	15+325	1190		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	10+000	11+768	1768		
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0		
Length Culvert Crossings (m) - Lc =		40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0		
Width of Right of Way (m) - Wr =		50		Bridges (m) =	60		
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	2898		
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0		
				#Tunnels =	0		
				# Culvert Crossings =	2		
				#Bridge Creek Crossings =	1		
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL ITEM COST</b>
<b>A EARTHWORK</b>							
1. Clearing and Grubbing		HECTARES	\$11,000	10.2	\$112,000	5.0%	\$118,000
2. Common Excavation		CUBIC METER	\$9	0	\$0	10.0%	\$0
3. Rock Excavation		CUBIC METER	\$13	115000	\$1,495,000	10.0%	\$1,645,000
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%	\$0
<b>B SURFACING / PAVING</b>							
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	12723	\$573,000	2.5%	\$587,000
2. Aggregate Base Course		MEGAGRAM	\$24	13766	\$330,000	5.0%	\$347,000
3. Gravel Borrow		MEGAGRAM	\$12	29850	\$358,000	10.0%	\$394,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	764	\$152,800	1.0%	\$154,000
<b>C STRUCTURES</b>							
1. Bridges (See above for number)							
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%	\$0
b. Substructure							
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
<b>D DRAINAGE</b>							
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	720	\$1,163,000	0.0%	\$1,163,000
3. Other Drainage							
a. Development Access		METER	\$100	0	\$0	15.0%	\$0
b. Airport Access		METER	\$100	2898	\$290,000	15.0%	\$334,000
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>							
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%	\$0
<b>G SUB TOTAL (Lines A, B, D through F)</b>							<b>\$5,199,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>							
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$311,940	1	\$312,000		\$312,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$155,970	1	\$156,000		\$156,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,299,750	1	\$1,300,000		\$1,300,000
<b>I SUB TOTAL (Lines G through H)</b>							<b>\$6,967,000</b>
<b>J FERRY TERMINAL</b>							
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$1,100	300	\$330,000	0.0%	\$330,000
2. Earthworks, Surfacing, Paving		SQUARE METER	\$65	26400	\$1,716,000	0.0%	\$1,716,000
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>							<b>\$9,013,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$901,300	1	\$901,000		\$901,000
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$21,560,000	1	\$21,560,000	0.0%	\$21,560,000
<b>N SUB TOTAL (Lines K through M)</b>							<b>\$31,474,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$4,721,100	1	\$4,721,000		\$4,721,000
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$629,480	1	\$629,000		\$629,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$2,517,920	1	\$2,518,000		\$2,518,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$3,462,140	1	\$3,462,000		\$3,462,000
<b>S RIGHT OF WAY</b>		LUMP SUM	\$4,140,310	1	\$4,140,000		\$4,140,000
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>							<b>\$47,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>G3 - Development Access</b>				
			<b>FERRY</b>				
		7/29/2003 7:36					Page 14
Width Clearing & Grubbing (m) - Wc = 35			Roadway (m) =				
Unit Weight Asphalt (Megagram/m) - Wa = 4.39		15+325	18+557	3232			
Unit Weight Aggregate Base Course (Megagram/m) - Wb = 4.75		0+000	0+000	0			
Unit Weight Gravel Borrow (Megagram/m) - Ws = 10.30		0+000	0+000	0			
Length Culvert Crossings (m) - Lc = 40		0+000	0+000	0			
Width Creek Crossing Bridge (m) - Wbr = 12		0+000	0+000	0			
Width of Right of Way (m) - Wr = 50			Bridges (m) =	55			
Contingency Line O (%) - Co = 15.0%			Length Road - Bridges (m) =	3177			
<b>CONCEPT COST ESTIMATE</b>			# Bridges =	0			
			#Tunnels =	0			
			# Culvert Crossings =	2			
			#Bridge Creek Crossings =	3			
	<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL</b>	<b>ITEM COST</b>
<b>A EARTHWORK</b>							
1. Clearing and Grubbing	HECTARES	\$11,000	11.2	\$123,000	5.0%	\$129,000	
2. Common Excavation	CUBIC METER	\$9	133000	\$1,197,000	10.0%	\$1,317,000	
3. Rock Excavation	CUBIC METER	\$13	0	\$0	10.0%	\$0	
4. Borrow	CUBIC METER	\$12	0	\$0	10.0%	\$0	
<b>B SURFACING / PAVING</b>							
1. Asphalt Concrete Pavement	MEGAGRAM	\$45	13948	\$628,000	2.5%	\$644,000	
2. Aggregate Base Course	MEGAGRAM	\$24	15091	\$362,000	5.0%	\$380,000	
3. Gravel Borrow	MEGAGRAM	\$12	32724	\$393,000	10.0%	\$432,000	
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)	MEGAGRAM	\$200	837	\$167,400	1.0%	\$169,000	
<b>C STRUCTURES</b>							
1. Bridges (See above for number)							
a. Superstructure.	SQUARE METER	\$0	0	\$0	10.0%	\$0	
b. Substructure							
i. Deep Water	LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0	
ii. Shallow Water	SQUARE METER	\$1,615	0	\$0	25.0%	\$0	
iii. Over Land	SQUARE METER	\$1,076	0	\$0	25.0%	\$0	
2. Moveable Bridge	SQUARE METER	\$0	0	\$0	0.0%	\$0	
3. Parking Garage	LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0	
<b>D DRAINAGE</b>							
1. Culvert Crossings (See above for number)	METER	\$500	360	\$180,000	15.0%	\$207,000	
2. Bridges needed for creek crossings (See above for number)	SQUARE METER	\$1,615	660	\$1,066,000	0.0%	\$1,066,000	
3. Other Drainage							
a. Development Access	METER	\$100	3177	\$318,000	15.0%	\$366,000	
b. Airport Access	METER	\$100	0	\$0	15.0%	\$0	
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>							
1. Connection to Airport	LUMP SUM	\$181,500	0	\$0	10.0%	\$0	
2. Connection to Ketchikan	LUMP SUM	\$121,000	0	\$0	10.0%	\$0	
<b>G SUB TOTAL (Lines A, B, D through F)</b>							\$4,960,000
<b>H MISCELLANEOUS ROADWAY ITEMS</b>							
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)	LUMP SUM	\$297,600	1	\$298,000			\$298,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)	LUMP SUM	\$148,800	1	\$149,000			\$149,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)	LUMP SUM	\$1,240,000	1	\$1,240,000			\$1,240,000
<b>I SUB TOTAL (Lines G through H)</b>							\$6,647,000
<b>J FERRY TERMINAL</b>							
1. Passenger Shelter & Ticket Booth	SQUARE METER	\$0	0	\$0	0.0%	\$0	
2. Earthworks, Surfacing, Paving	SQUARE METER	\$0	0	\$0	0.0%	\$0	
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>							\$6,647,000
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$664,700	1	\$665,000		\$665,000
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%	\$0
<b>N SUB TOTAL (Lines K through M)</b>							\$7,312,000
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$1,096,800	1	\$1,097,000		\$1,097,000
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$146,240	1	\$146,000		\$146,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$584,960	1	\$585,000		\$585,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$804,320	1	\$804,000		\$804,000
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0		\$0
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>							\$10,000,000



<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>G4 -</b>	<b>Airport Access</b>			
				<b>FERRY</b>			
		7/29/2003 7:36					Page 15
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	0+000	0+000	0		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	0+000	0+000	0		
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0		
Length Culvert Crossings (m) - Lc =		40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0		
Width of Right of Way (m) - Wr =		50		Bridges (m) =	0		
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	0		
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0		
				#Tunnels =	0		
				# Culvert Crossings =	0		
				#Bridge Creek Crossings =	0		
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL ITEM COST</b>
<b>A EARTHWORK</b>							
1. Clearing and Grubbing		HECTARES	\$11,000	0	\$0	5.0%	\$0
2. Common Excavation		CUBIC METER	\$9	0	\$0	10.0%	\$0
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%	\$0
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%	\$0
<b>B SURFACING / PAVING</b>							
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	0	\$0	2.5%	\$0
2. Aggregate Base Course		MEGAGRAM	\$24	0	\$0	5.0%	\$0
3. Gravel Borrow		MEGAGRAM	\$12	0	\$0	10.0%	\$0
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	0	\$0	1.0%	\$0
<b>C STRUCTURES</b>							
1. Bridges (See above for number)							
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%	\$0
b. Substructure							
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
<b>D DRAINAGE</b>							
1. Culvert Crossings (See above for number)		METER	\$500	0	\$0	15.0%	\$0
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	0	\$0	0.0%	\$0
3. Other Drainage							
a. Development Access		METER	\$100	0	\$0	15.0%	\$0
b. Airport Access		METER	\$100	0	\$0	15.0%	\$0
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>							
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%	\$0
<b>G SUB TOTAL (Lines A, B, D through F)</b>							<b>\$250,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>							
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$15,000	1	\$15,000		\$15,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$7,500	1	\$8,000		\$8,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$62,500	1	\$63,000		\$63,000
<b>I SUB TOTAL (Lines G through H)</b>							<b>\$336,000</b>
<b>J FERRY TERMINAL</b>							
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$1,100	300	\$330,000	0.0%	\$330,000
2. Earthworks, Surfacing, Paving		SQUARE METER	\$65	8500	\$553,000	0.0%	\$553,000
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>							<b>\$1,219,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$121,900	1	\$122,000		\$122,000
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$21,560,000	1	\$21,560,000	0.0%	\$21,560,000
<b>N SUB TOTAL (Lines K through M)</b>							<b>\$22,901,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$3,435,150	1	\$3,435,000		\$3,435,000
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$458,020	1	\$458,000		\$458,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$1,832,080	1	\$1,832,000		\$1,832,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$2,519,110	1	\$2,519,000		\$2,519,000
<b>S RIGHT OF WAY</b>		LUMP SUM	\$421,739	1	\$422,000		\$422,000
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>							<b>\$32,000,000</b>



<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>G4 - Development Access</b>				
			<b>FERRY</b>				
		7/29/2003 7:36					Page 16
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =			
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	10+000	11+850	1850		
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	15+325	18+557	3232		
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0		
Length Culvert Crossings (m) - Lc =		40	0+000	0+000	0		
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0		
Width of Right of Way (m) - Wr =		50		Bridges (m) =	55		
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	5027		
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0		
				#Tunnels =	0		
				# Culvert Crossings =	2		
				#Bridge Creek Crossings =	3		
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>	<b>TOTAL ITEM COST</b>
<b>A EARTHWORK</b>							
1. Clearing and Grubbing		HECTARES	\$11,000	17.6	\$194,000	5.0%	\$204,000
2. Common Excavation		CUBIC METER	\$9	0	\$0	10.0%	\$0
3. Rock Excavation		CUBIC METER	\$13	191000	\$2,483,000	10.0%	\$2,731,000
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%	\$0
<b>B SURFACING / PAVING</b>							
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	22069	\$993,000	2.5%	\$1,018,000
2. Aggregate Base Course		MEGAGRAM	\$24	23879	\$573,000	5.0%	\$602,000
3. Gravel Borrow		MEGAGRAM	\$12	51779	\$621,000	10.0%	\$683,000
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	1325	\$265,000	1.0%	\$268,000
<b>C STRUCTURES</b>							
1. Bridges (See above for number)							
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%	\$0
b. Substructure							
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%	\$0
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%	\$0
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%	\$0
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%	\$0
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%	\$0
<b>D DRAINAGE</b>							
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%	\$207,000
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%	\$1,066,000
3. Other Drainage							
a. Development Access		METER	\$100	5027	\$503,000	15.0%	\$578,000
b. Airport Access		METER	\$100	0	\$0	15.0%	\$0
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%	\$250,000
<b>F MISCELLANEOUS ROADS</b>							
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%	\$0
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%	\$0
<b>G SUB TOTAL (Lines A, B, D through F)</b>							<b>\$7,607,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>							
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$456,420	1	\$456,000		\$456,000
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$228,210	1	\$228,000		\$228,000
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,901,750	1	\$1,902,000		\$1,902,000
<b>I SUB TOTAL (Lines G through H)</b>							<b>\$10,193,000</b>
<b>J FERRY TERMINAL</b>							
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%	\$0
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%	\$0
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>							<b>\$10,193,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$1,019,300	1	\$1,019,000		\$1,019,000
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%	\$0
<b>N SUB TOTAL (Lines K through M)</b>							<b>\$11,212,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$1,681,800	1	\$1,682,000		\$1,682,000
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$224,240	1	\$224,000		\$224,000
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$896,960	1	\$897,000		\$897,000
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$1,233,320	1	\$1,233,000		\$1,233,000
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0		\$0
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>							<b>\$15,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>F1 - <i>Airport Access</i></b>			
			<b>LOW LEVEL WEST - HIGH LEVEL EAST</b>			
		7/29/2003 7:36				Page 17
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =		
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	509+961	511+421	1460	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	512+260	513+042	782	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	514+174	515+807	1633	
Length Culvert Crossings (m) - Lc =		40	11+400	15+023	3623	
Width Creek Crossing Bridge (m) - Wbr =		12	10+000	11+800	1800	
Width of Right of Way (m) - Wr =		50		Creek Crossing Bridges (m) =	70	
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	9228	
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	2	
				#Tunnels =	0	
				# Culvert Crossings =	0	
				#Bridge Creek Crossings =	2	
						<b>TOTAL</b>
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
<b>A EARTHWORK</b>						<b>ITEM COST</b>
1. Clearing and Grubbing		HECTARES	\$11,000	32.3	\$355,000	5.0%
2. Common Excavation		CUBIC METER	\$9	0	\$0	10.0%
3. Rock Excavation		CUBIC METER	\$13	564000	\$7,332,000	10.0%
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	40511	\$1,823,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	43833	\$1,052,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	232000	\$2,784,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	2431	\$486,200	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$2,153	26470	\$56,984,000	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$16,645,872	1	\$16,646,000	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	6884	\$11,117,000	25.0%
iii. Over Land		SQUARE METER	\$1,076	14170	\$15,246,000	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	0	\$0	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	840	\$1,357,000	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	0	\$0	15.0%
b. Airport Access		METER	\$100	9228	\$923,000	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	1	\$250,000	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$17,633,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$1,057,980	1	\$1,058,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$528,990	1	\$529,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$4,408,250	1	\$4,408,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$23,628,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$1,100	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$65	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$140,072,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$14,007,200	1	\$14,007,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$21,560,000	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$154,079,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$23,111,850	1	\$23,112,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$3,081,580	1	\$3,082,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$12,326,320	1	\$12,326,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$16,948,690	1	\$16,949,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$565,031	1	\$565,000	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$210,000,000</b>

<b>GRAVINA ACCESS PROJECT</b>		<b>OPTION :</b>	<b>F1 - Development Access</b>			
			<b>LOW LEVEL WEST - HIGH LEVEL EAST</b>			
		7/29/2003 7:36				Page 18
Width Clearing & Grubbing (m) - Wc =		35		Roadway (m) =		
Unit Weight Asphalt (Megagram/m) - Wa =		4.39	15+023	18+557	3534	
Unit Weight Aggregate Base Course (Megagram/m) - Wb =		4.75	0+000	0+000	0	
Unit Weight Gravel Borrow (Megagram/m) - Ws =		10.30	0+000	0+000	0	
Length Culvert Crossings (m) - Lc =		40	0+000	0+000	0	
Width Creek Crossing Bridge (m) - Wbr =		12	0+000	0+000	0	
Width of Right of Way (m) - Wr =		50		Bridges (m) =	55	
Contingency Line O (%) - Co =		15.0%		Length Road - Bridges (m) =	3479	
<b>CONCEPT COST ESTIMATE</b>				# Bridges =	0	
				#Tunnels =	0	
				# Culvert Crossings =	2	
				#Bridge Creek Crossings =	3	
		<b>UNITS</b>	<b>UNIT COST</b>	<b>QUANTITY</b>	<b>COST</b>	<b>CONTINGENCY</b>
						<b>TOTAL</b>
						<b>ITEM COST</b>
<b>A EARTHWORK</b>						
1. Clearing and Grubbing		HECTARES	\$11,000	12.2	\$134,000	5.0%
2. Common Excavation		CUBIC METER	\$9	60000	\$540,000	10.0%
3. Rock Excavation		CUBIC METER	\$13	0	\$0	10.0%
4. Borrow		CUBIC METER	\$12	0	\$0	10.0%
<b>B SURFACING / PAVING</b>						
1. Asphalt Concrete Pavement		MEGAGRAM	\$45	15273	\$687,000	2.5%
2. Aggregate Base Course		MEGAGRAM	\$24	16526	\$397,000	5.0%
3. Gravel Borrow		MEGAGRAM	\$12	48000	\$576,000	10.0%
4. Asphalt Cement (PG-52-28) (6% of Asphalt Conc. Pavmt)		MEGAGRAM	\$200	917	\$183,400	1.0%
<b>C STRUCTURES</b>						
1. Bridges (See above for number)						
a. Superstructure.		SQUARE METER	\$0	0	\$0	10.0%
b. Substructure						
i. Deep Water		LUMP SUM	\$14,700,000	0	\$0	25.0%
ii. Shallow Water		SQUARE METER	\$1,615	0	\$0	25.0%
iii. Over Land		SQUARE METER	\$1,076	0	\$0	25.0%
2. Moveable Bridge		SQUARE METER	\$0	0	\$0	0.0%
3. Parking Garage		LUMP SUM	\$7,000,000	0	\$0	0.0%
<b>D DRAINAGE</b>						
1. Culvert Crossings (See above for number)		METER	\$500	360	\$180,000	15.0%
2. Bridges needed for creek crossings (See above for number)		SQUARE METER	\$1,615	660	\$1,066,000	0.0%
3. Other Drainage						
a. Development Access		METER	\$100	3479	\$348,000	15.0%
b. Airport Access		METER	\$100	0	\$0	15.0%
<b>E TRAFFIC SERVICES</b>		LUMP SUM	\$250,000	0	\$0	0.0%
<b>F MISCELLANEOUS ROADS</b>						
1. Connection to Airport		LUMP SUM	\$181,500	0	\$0	10.0%
2. Connection to Ketchikan		LUMP SUM	\$121,000	0	\$0	10.0%
<b>G SUB TOTAL (Lines A, B, D through F)</b>						<b>\$4,348,000</b>
<b>H MISCELLANEOUS ROADWAY ITEMS</b>						
1. Removal Items (6% of Line G; Items include pavement, culvert pipes, sidewalks, curb & gutter, etc.)		LUMP SUM	\$260,880	1	\$261,000	
2. Other Excavation and Embankment Construction (3% of Line G; Items include muck excavation, minor structure excavation and backfill, etc.)		LUMP SUM	\$130,440	1	\$130,000	
3. Miscellaneous Construction Items (25% of Line G; Items include w-beam guardrail, guardrail/bridgerail connections, SRT/CRT end sections, sidewalk, curb&gutter, seeding, topsoil, geotextiles, riprap, erosion and pollution control/administration, construction surveying, traffic maintenance, traffic control devices, lighting/load centers, etc.)		LUMP SUM	\$1,087,000	1	\$1,087,000	
<b>I SUB TOTAL (Lines G through H)</b>						<b>\$5,826,000</b>
<b>J FERRY TERMINAL</b>						
1. Passenger Shelter & Ticket Booth		SQUARE METER	\$0	0	\$0	0.0%
2. Earthworks, Surfacing, Paving		SQUARE METER	\$0	0	\$0	0.0%
<b>K SUB TOTAL (Lines A through F, H &amp; J)</b>						<b>\$5,826,000</b>
<b>L MOBILIZATION (10% of Line K)</b>		LUMP SUM	\$582,600	1	\$583,000	
<b>M Ferry System Acquisition Cost</b>		LUMP SUM	\$0	0	\$0	0.0%
<b>N SUB TOTAL (Lines K through M)</b>						<b>\$6,409,000</b>
<b>O CONTINGENCIES (15% of Lines N)</b>		LUMP SUM	\$961,350	1	\$961,000	
<b>P MITIGATION (2% of Line N)</b>		LUMP SUM	\$128,180	1	\$128,000	
<b>Q ENGINEERING/ADMINISTRATION (8% of Line N)</b>		LUMP SUM	\$512,720	1	\$513,000	
<b>R CONSTRUCTION MANAGEMENT (11% of Line N)</b>		LUMP SUM	\$704,990	1	\$705,000	
<b>S RIGHT OF WAY</b>		LUMP SUM	\$0	1	\$0	
<b>T TOTAL ESTIMATED COST (Lines N through S)</b>						<b>\$9,000,000</b>

# GRAVINA ACCESS PROJECT

OPTION : 7/29/2003 7:36	NB NO BUILD	C3(a) 200' BRIDGE CLEARANCE - AIRPORT AREA	C3(b) 120' BRIDGE CLEARANCE - AIRPORT AREA	C4 200' BRIDGE CLEARANCE - AIRPORT AREA	D1 120' BRIDGE CLEARANCE - AIRPORT AREA	F3 200' WEST - 60' EAST BRIDGE CLEARANCE - PENNOCK IS.	G2 FERRY - PENNINSULA POINT	G3 FERRY - DOWNTOWN	G4 FERRY - EXPAND EXISTING	F1 200' BRIDGE CLEARANCE - PENNOCK ISLAND
<b>Begin Construction - Y = 2003</b> <b>Life Span (years) - n = 20</b> <b>Years to Construct - yc = 3</b> <b>Initial Cost, Distributed over the #</b> <b>of Years to Construct (Y/N) N</b> <b>Eff. Real Discount Rate/Yr - i = 4.2%</b> <b>Roadway Repaving* (\$/m) = \$173</b> <b>Repaving* (\$/m<sup>2</sup>) = \$15</b>	<b>2 Ferries</b> <b>1 Route</b> 0	2	3	5	6	8	<b>4 Ferries</b> <b>2 Routes</b> 9	<b>4 Ferries</b> <b>2 Routes</b> 10	<b>4 Ferries</b> <b>2 Routes</b> 11	8
<b>CASH FLOW (Constant 2003 Dollars):</b>										
<b>LIABILITIES:</b>										
<b>Initial Cost of Constr. &amp; Project Development:</b> Year 2003 to Year 2005 (Beginning of Year)	0	\$188,000,000	\$157,000,000	\$184,000,000	\$122,000,000	\$196,000,000	\$49,000,000	\$57,000,000	\$47,000,000	\$219,000,000
<b>Annual Operating &amp; Maintenance Costs:</b> Year 2006 to 2025 (End of Year)	\$1,070,000	\$100,000	\$100,000	\$100,000	\$80,000	\$80,000	\$3,336,000	\$3,336,000	\$3,336,000	\$80,000
<b>Periodic Maintenance Costs:</b>										
<b>Repaving:</b> Frequency (Years): Length Project (m): Parking Lot (m <sup>2</sup> ):	\$117,525 20 0 7835	\$1,057,895 20 6115 0	\$1,105,816 20 6392 0	\$1,036,443 20 5991 0	\$960,669 20 5553 0	\$559,136 20 3232 0	\$1,287,439 20 5768 19305	\$1,360,445 20 6190 19305	\$1,082,736 20 5082 13570	\$645,161 20 3232 5735
<b>Mechanical/Electrical Equipment Replacement:</b> Frequency (Years):	\$5,244,000 25	\$0 1	\$0 1	\$0 1	\$0 1	\$0 1	\$10,488,000 25	\$10,488,000 25	\$10,488,000 25	\$0 1
<b>Terminal Maintenance:</b> Frequency (Years):	\$3,495,000 10	\$0 10	\$0 10	\$0 10	\$0 10	\$0 10	\$6,990,000 10	\$6,990,000 10	\$6,990,000 10	\$0 10
<b>Existing Ferry Replacement:</b> Year Ferry 2 Replaced:	\$3,825,000 10	\$0 10	\$0 10	\$0 10	\$0 10	\$0 10	\$3,825,000 10	\$3,825,000 10	\$3,825,000 10	\$0 10
<b>Ferry Replacement(1):</b> Frequency (Years):	\$3,825,000 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$3,825,000 50	\$3,825,000 50	\$3,825,000 50	\$0 50
<b>EQUITY:</b>										
<b>Remaining Service Life Value**:</b>										
*Paving Unit Costs Include: 10% Mobilization 15% Contingencies 8% Engineering/Admin. 15% Construction Mngmnt **Straight Line Depreciation Method.	<b>Bridge(s):</b> Construction Cost: Life of Bridge(s): <b>Parking Garage(s):</b> Construction Cost: Life of Parking Garage(s): <b>Paving/Repaving:</b> <b>Mechanical/Electrical Equipment/Replacement:</b> <b>Terminal Maintenance:</b> <b>Ferry 1/Replacement Salvage:</b> <b>Ferry 2/Replacement Salvage:</b> <b>Ferry 3-4/Replacement Salvage:</b> Life of Ferry(s):	\$0 \$108,598,000 75 \$0 \$0 75 \$0 \$1,048,800 \$0 \$2,295,000 \$3,060,000 \$4,590,000 50	\$79,638,533 \$89,328,000 75 \$0 \$0 75 \$0 \$0 \$0 \$0 \$0 \$0 50	\$65,507,200 \$89,328,000 75 \$0 \$0 75 \$0 \$0 \$0 \$0 \$0 \$0 50	\$71,134,067 \$97,001,000 75 \$0 \$0 75 \$0 \$0 \$0 \$0 \$0 \$0 50	\$43,458,800 \$59,262,000 75 \$0 \$0 75 \$0 \$0 \$0 \$0 \$0 \$0 50	\$73,656,733 \$100,441,000 75 \$0 \$0 75 \$0 \$2,097,600 \$0 \$2,295,000 \$3,060,000 \$4,590,000 50	\$0 \$0 75 \$0 \$0 75 \$0 \$2,097,600 \$0 \$2,295,000 \$3,060,000 \$4,590,000 50	\$0 \$0 75 \$0 \$0 75 \$0 \$2,097,600 \$0 \$2,295,000 \$3,060,000 \$4,590,000 50	\$73,656,733 \$100,441,000 75 \$0 \$0 75 \$0 \$0 \$0 \$0 \$0 \$0 50
<b>LIFE CYCLE COST (2003 Dollars):</b>										
<b>LIABILITIES:</b>										
<b>Initial Cost of Constr. &amp; Project Development:</b>	\$0	\$188,000,000	\$157,000,000	\$184,000,000	\$122,000,000	\$196,000,000	\$49,000,000	\$57,000,000	\$47,000,000	\$219,000,000
<b>Annual Operating &amp; Maintenance Costs:</b>	\$12,628,519	\$1,180,235	\$1,180,235	\$1,180,235	\$944,188	\$944,188	\$39,372,654	\$39,372,654	\$39,372,654	\$944,188
<b>Periodic Maintenance Costs:</b>										
<b>Repaving:</b> <b>Mechanical/Electrical Equipment Replacement:</b> <b>Terminal Maintenance:</b> <b>Ferry 1 Replacement (initial replacement not included):</b> <b>Ferry 2 Replacement:</b> <b>Ferry 3-4 Replacement:</b>	\$0 \$0 \$2,047,231 \$0 \$2,240,532 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$4,094,462 \$0 \$2,240,532 \$0	\$0 \$0 \$4,094,462 \$0 \$2,240,532 \$0	\$0 \$0 \$4,094,462 \$0 \$2,240,532 \$0	\$0 \$0 \$0 \$0 \$0 \$0
<b>TOTAL LIFE CYCLE COST OF LIABILITIES :</b>	\$16,916,282	\$189,180,235	\$158,180,235	\$185,180,235	\$122,944,188	\$196,944,188	\$94,707,647	\$102,707,647	\$92,707,647	\$219,944,188
<b>EQUITY:</b>										
<b>Remaining Service Life Value**:</b>										
<b>Bridge(s):</b> <b>Parking Garage(s):</b> <b>Paving/Repaving:</b> <b>Mechanical/Electrical Equipment/Replacement:</b> <b>Terminal Maintenance:</b> <b>Ferry 1/Replacement Salvage:</b> <b>Ferry 2/Replacement Salvage:</b> <b>Ferry 3-4/Replacement Salvage:</b>	\$0 \$0 \$0 \$407,132 \$0 \$890,892 \$1,187,856 \$1,781,784	\$30,914,748 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$25,429,130 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$27,613,414 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$16,870,199 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$28,592,684 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$814,264 \$0 \$890,892 \$1,187,856 \$1,781,784	\$0 \$0 \$0 \$814,264 \$0 \$890,892 \$1,187,856 \$1,781,784	\$0 \$0 \$0 \$814,264 \$0 \$890,892 \$1,187,856 \$1,781,784	\$28,592,684 \$0 \$0 \$0 \$0 \$0 \$0 \$0
<b>TOTAL LIFE CYCLE COST OF EQUITY :</b>	\$4,267,665	\$30,914,748	\$25,429,130	\$27,613,414	\$16,870,199	\$28,592,684	\$4,674,797	\$4,674,797	\$4,674,797	\$28,592,684
<b>TOTAL LIFE CYCLE COST :</b>	(\$12,648,617)	(\$158,265,487)	(\$132,751,106)	(\$157,566,822)	(\$106,073,990)	(\$168,351,505)	(\$90,032,851)	(\$98,032,851)	(\$88,032,851)	(\$191,351,505)
<b>Average Annual O&amp;M Costs:</b>	\$2,094,136.25	\$152,894.75	\$155,290.80	\$151,822.15	\$128,033.45	\$107,956.80	\$4,977,891.95	\$4,981,542.25	\$4,967,656.80	\$112,258.05

The Average Annual O&M Costs is not used in calculating Life Cycle Costs. The Average Annual O&M Cost includes all initial construction and project development costs, plus all annual operating and maintenance costs, plus all periodic maintenance costs.

**GRAVINA ACCESS PROJECT**

**Future Airport Development**

**Parking Garage Construction Estimate**

Stall Length (ft)	Width (ft)	Stall Area (sq. ft.)	# of Stalls	TotalStall Area (sq. ft.)	% Coverage	Total Floor Area (sq. ft.)	Structure Unit Cost	Total Cost
18	8.5	153	300	45900	80%	103275	\$ 85.00	\$ 8,778,375.00

**Check by unit stall cost:**

Number of Parking Stalls	Unit Cost per Parking Stall	Total Estimated Cost
300	\$ 25,000	\$ 7,500,000



**Option: C3(a)-200**

Total	1735	unit cost	Total area	
Foundation Cost/sf		\$2,153	25331	\$54,532,122.95
Superstructure Cost/sf				
Total cost/sf		\$13,629,820	1	\$13,629,820.00
Total cost/sq. meter		\$1,615	7096	\$11,459,394.00
Total area sq. meter		\$1,076	12826	\$13,800,883.60
Total Cost of Bridge				\$93,422,220.55

**Option: C3(b)-120**

Total	1297	unit cost	Total area	
Foundation Cost/sf		\$2,153	18936	\$40,765,512.09
Superstructure Cost/sf				
Total cost/sf		\$16,410,000	1	\$16,410,000.00
Total cost/sq. meter		\$1,615	7981	\$12,889,126.37
Total area sq. meter		\$1,076	5845	\$6,289,053.00
Total Cost of Bridge				\$76,353,691.46

**Option: C4(a)-200**

Total	1520	unit cost	Total area	
Foundation Cost/sf		\$2,153	22192	\$47,774,539.99
Superstructure Cost/sf				
Total cost/sf		\$13,629,820	1	\$13,629,820.00
Total cost/sq. meter		\$1,615	6935	\$11,199,717.50
Total area sq. meter		\$1,076	9971	\$10,728,384.54
Total Cost of Bridge				\$83,332,462.04

**Option: D1-120**

Total	980	unit cost	Total area	
Foundation Cost/sf		\$2,153	14308	\$30,802,006.05
Superstructure Cost/sf				
Total cost/sf		\$10,260,000	1	\$10,260,000.00
Total cost/sq. meter		\$1,615	0	\$0.00
Total area sq. meter		\$1,076	9334	\$10,043,594.04
Total Cost of Bridge				\$51,105,600.08

**Option: F1-200**

Total	1813	unit cost	Total area	
Foundation Cost/sf		\$2,153	26470	\$56,983,711.19
Superstructure Cost/sf				
Total cost/sf		\$16,645,872	1	\$16,645,872.00
Total cost/sq. meter		\$1,615	6884	\$11,117,019.17
Total area sq. meter		\$1,076	14170	\$15,246,427.62
Total Cost of Bridge				\$99,993,029.98

**Option: F3-200**

Total	1888	unit cost	Total area	
Foundation Cost/sf		\$2,153	27565	\$59,341,007.57
Superstructure Cost/sf				
Total cost/sf		\$18,514,656	1	\$18,514,656.00
Total cost/sq. meter		\$1,615	2355	\$3,804,123.46
Total area sq. meter		\$1,076	15742	\$16,938,725.99
Total Cost of Bridge				\$98,598,513.02